

CLAIMS

1. A method for synthesizing a protein in a cell-free system using an extract liquid for cell-free protein synthesis,
5 the method comprising translation reaction in the presence of arthropod-derived microsomal membranes.

2. The method according to claim 1, wherein in the translation reaction, the ratio of the concentration of mRNA ($\mu\text{g/mL}$) to the concentration of the arthropod-derived
10 microsomal membranes (A260) is 1 : 0.1 - 5.

3. The method according to claim 2, wherein the ratio is 1 : 0.3 - 2.3.

4. The method according to claim 1, wherein the arthropod-derived microsomal membranes are extracted from
15 insect tissue.

5. The method according to claim 4, wherein the insect tissue is a tissue of *Bombyx mori* L.

6. The method according to claim 5, wherein the tissue of *Bombyx mori* L. is a fat body.

20 7. The method according to claim 1, wherein the arthropod-derived microsomal membranes are extracted from cultured insect cells.

8. The method according to claim 7, wherein the cultured insect cells are derived from an ovum of *Trichoplusia ni* or
25 from an ovary cell of *Spodoptera frugiperda*.

9. The method according to claim 1, wherein the extract liquid for cell-free protein synthesis comprises an arthropod-derived extract.

10. The method according to claim 9, wherein the
5 arthropod-derived extract is extracted from insect tissue.

11. The method according to claim 10, wherein the insect tissue is a tissue of *Bombyx mori* L.

12. The method according to claim 11, wherein the tissue of *Bombyx mori* L. comprises at least a posterior silk gland
10 of *Bombyx mori* L. larva.

13. The method according to claim 9, wherein the arthropod-derived extract is extracted from cultured insect cells.

14. The method according to claim 13, wherein the cultured
15 insect cells are derived from an ovum of *Trichoplusia ni* or from an ovary cell of *Spodoptera frugiperda*.

15. The method according to claim 1, wherein the extract liquid for cell-free protein synthesis comprises an extract derived from wheat germ.

20 16. The method according to claim 1, wherein the extract liquid for cell-free protein synthesis comprises an extract derived from cultured mammalian cells.

17. The method according to claim 1, wherein the extract liquid for cell-free protein synthesis comprises an extract
25 derived from rabbit reticulocyte.

18. The method according to claim 1, wherein the extract liquid for cell-free protein synthesis comprises an extract derived from *Escherichia coli*.

19. The method according to claim 1, wherein the extract
5 liquid for cell-free protein synthesis comprises an extract derived from yeast.

20. A method for posttranslational modification of protein in cell-free protein synthesis using an extract liquid for cell-free protein synthesis, the method comprising
10 translation reaction in the presence of arthropod-derived microsomal membranes.

21. The method according to claim 20, wherein in the translation reaction, the ratio of the concentration of mRNA ($\mu\text{g/mL}$) to the concentration of the arthropod-derived
15 microsomal membranes (A260) is 1 : 0.1 - 5.

22. The method according to claim 21, wherein the ratio is 1 : 0.3 - 2.3.

23. The method according to claim 20, wherein the arthropod-derived microsomal membranes are extracted from
20 insect tissue.

24. The method according to claim 23, wherein the insect tissue is a tissue of *Bombyx mori* L.

25. The method according to claim 24, wherein the tissue of *Bombyx mori* L. is a fat body.

26. The method according to claim 20, wherein the

arthropod-derived microsomal membranes are extracted from cultured insect cells.

27. The method according to claim 26, wherein the cultured insect cells are derived from an ovum of *Trichoplusia ni* or
5 from an ovary cell of *Spodoptera frugiperda*.

28. The method according to claim 20, wherein the extract liquid for cell-free protein synthesis comprises an arthropod-derived extract.

29. The method according to claim 28, wherein the
10 arthropod-derived extract is extracted from insect tissue.

30. The method according to claim 29, wherein the insect tissue is a tissue of *Bombyx mori* L.

31. The method according to claim 30, wherein the tissue of *Bombyx mori* L. comprises at least a posterior silk gland
15 of *Bombyx mori* L. larva.

32. The method according to claim 28, wherein the arthropod-derived extract is extracted from cultured insect cells.

33. The method according to claim 32, wherein the cultured
20 insect cells are derived from an ovum of *Trichoplusia ni* or from an ovary cell of *Spodoptera frugiperda*.

34. The method according to claim 20, wherein the extract liquid for cell-free protein synthesis comprises an extract derived from wheat germ.

25 35. The method according to claim 20, wherein the extract

liquid for cell-free protein synthesis comprises an extract derived from cultured mammalian cells.

36. The method according to claim 20, wherein the extract liquid for cell-free protein synthesis comprises an extract
5 derived from rabbit reticulocyte.

37. The method according to claim 20, wherein the extract liquid for cell-free protein synthesis comprises an extract derived from *Escherichia coli*.

38. The method according to claim 20, wherein the extract
10 liquid for cell-free protein synthesis comprises an extract derived from yeast.

39. The method according to claim 20, wherein the posttranslational modification of protein is N-glycosylation and/or signal sequence cleavage.

15 40. An N-glycosylated protein which is obtained by the protein synthesis method according to claim 1.

41. A protein having a cleaved signal sequence, which is obtained by the protein synthesis method according to claim
1.